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THE
Municipality of George Town,
PENANG.
STRAITS SETTLEMENTS.

HEALTH OFFICER'S
ANNUAL REPORT

FOR THE YEAR 1936.



PRICE 50 CENTS PER COPY.

OBTAINABLE FROM THE MUNICIPAL SECRETARY.

1937
The Criterion Press Co., Ltd.,
Penang.



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STATISTICAL SUMMARY.

Situation	Lat. 5° 24' N., Long. 100° 20' E.
Average Elevation above L.W.M.O.S.T.	Town area 12 feet 6 inches. Suburban area 25 feet 0 inch.
O. S. Tides and fall	...	...	...	...	9 feet 0 inch.
Rainfall 1936 (average of three readings within Municipal limits)	...	...	...	...	101.11 inches.
Average annual rainfall for preceding 56 years (up to 1936) at the Prison	...	...	...	...	108.60 inches.
Rainfall for 1936 at the Prison	...	...	...	...	105.48 inches.
Mean Temperature 1936 (observed at 9 a.m.)	...	...	...	...	82.6° F.
Mean Temperature 1936 (observed at 3 p.m.)	...	...	...	...	88.7° F.
Mean Maximum Temperature 1936	...	...	...	...	90.0° F.
Mean Minimum Temperature 1936	...	...	...	...	74.1° F.
Absolute Maximum Temperature 1936	...	...	...	...	95° F.
Absolute Minimum Temperature 1936	...	...	...	...	68° F.
Total area of Penang Island	...	...	...	...	108 square miles.
Area within Municipal limits	...	...	...	...	9.4 square miles or 5,845 acres
Estimated population (mid-year)	...	...	...	...	165,411
Density of population	...	...	...	...	28.30 per acre.
Crude death rate	...	...	...	...	22.12 per mille.
Infant mortality	...	...	...	...	126
Birth rate	...	...	...	...	36.12 per mille.
Sterling equivalent	...	...	...	...	2s. 4d.



STAFF OF THE HEALTH DEPARTMENT ON 31st DECEMBER, 1936.

W. H. Brodie ...	... M.B., Ch. B., D.P.H.	
	Health Officer,	
	Registrar of Births and Deaths,	
	Deputy Superintendent of Vaccination,	
	Registrar of Midwives,	
	Medical Superintendent of Infectious Diseases Hospital,	
	Medical Superintendent of Chinese Small-pox Hospital,	
E. W. Graham ...	... M.B., Ch. B.,	
	Deputy Health Officer,	
	Deputy Registrar of Births and Deaths,	
	Deputy Superintendent of Vaccination.	
T. P. Khoo ...	... M.B., B. S. (Hong Kong),	
	Deputy Registrar of Deaths,	
	Assistant Medical Officer.	

SANITARY SECTION.

J. E. Miller ...	... M. S. I. A., Cert. R. S. I.,	
	Chief Sanitary Inspector, joined the service 14th September, 1933.	
R. J. Rangel ...	... Sanitary Inspector,	do. 1st October, 1913.
Ow Leong Chye ...	... do.	do. 1st July, 1921.
E. V. Lessler ...	... do.	do. 1st July, 1921.
John Loh ...	... Sanitary Sub-Inspector,	do. 17th May, 1921.
Yeap Hin Tat ...	... do.	do. 14th August, 1922.
Lim Khay Seng ...	... do.	do. 1st March, 1923.
Lo Siew Tean ...	... do.	do. 1st July, 1923.
Teoh Cheng Hoe ...	... do.	do. 1st December, 1923.
M. S. d'Orville ...	... do.	do. 18th February, 1924.
Oh Cheng Guan ...	... do.	do. 18th May, 1926.
Liew Ah Foo ...	... do.	do. 20th May, 1926.
Lim Teik Ghee ...	... do.	do. 16th January, 1930.
Rejab bin Othman ...	... do.	do. 6th February, 1930.

Oh Cheng Ian ...	Sanitary Sub-Inspector, joined the service	1st November, 1933.
C. B. de Souza ...	do.	12th June, 1933.
M. B. Pestana ...	do.	1st July, 1934.
Lee Yin Koon ...	do.	1st January, 1935.
Lim Mah Chan ...	do.	1st August, 1935.
Teoh Cheng Kooi ...	do.	1st May, 1936.
E. D. Joseph ...	Chief Clerk,	do. 6th October, 1920.
Ooi Leong Teik ...	2nd Clerk,	do. 1st January, 1921.
Lim Chin Aun ...	3rd Clerk,	do. 17th October, 1928.
Goh Swee Hock ...	4th Clerk,	do. 1st September, 1934.
Hamad bin Senawi ...	Milk Inspector,	do. 2nd July, 1906.
N. Rethinam ...	Dresser,	do. 15th January, 1934.
Eusoff bin Abdul Gaffour .	Assistant Dresser,	do. 25th August, 1930.

MATERNITY AND CHILD WELFARE SECTION.

Yit Hou Hoashoo ...	M.B., Ch. B.	
	Lady Assistant Medical Officer	
Miss H. Flint ...	S.R.N., S.C.M., A.R. San. I.,	
	Health Sister, joined the service	1st May, 1928.
Miss F. M. Sloan ...	S.R.N., S.C.M.,	
	Health Sister	do. 13th November, 1931.
Mrs. Lena Benjamin ...	Health Nurse	do. 1st August, 1936.
Miss Lim Beh Kah ...	do.	do. 1st August, 1936.

Eight qualified midwives as part-time nurses.

CONSERVANCY SECTION, MARKETS & BATHS, & STREET STALLS.

W. G. F. Colebeck ...	Cert. R.S.I., Certificated Food Inspector,	
	Town Superintendent, joined the service	27th August, 1936.
Yeap Choo Eng .	Conservancy Inspector	do. 18th August, 1921.
G. H. Coombs ...	do.	do. 8th May, 1924.
M. Maruthalingam ...	do.	do. 1st October, 1931.
Foo Joo Sun ...	Clerk	do. 1st July, 1926.
S. M. Soosay ...	do.	do. 5th January, 1929.
G. D. Cooper ...	Market Inspector	do. 7th October, 1935.
Lim Cheng Hoe .	Asst. Inspector of Street Stalls	do. 1st May, 1936.

MUNICIPAL HEALTH OFFICE,

Penang, 23rd March, 1937.

To

THE MUNICIPAL COMMISSIONERS.

Gentlemen,

I have the honour to submit the following report on the health of the Municipality during 1936.

I. POPULATION.

The estimated mid-year population was 165,411. This figure is arrived at by the Registrar General's method of estimation which is commonly adopted.

The estimated distribution of the population at the middle of 1936 among the various races was as follows:—

TABLE I.

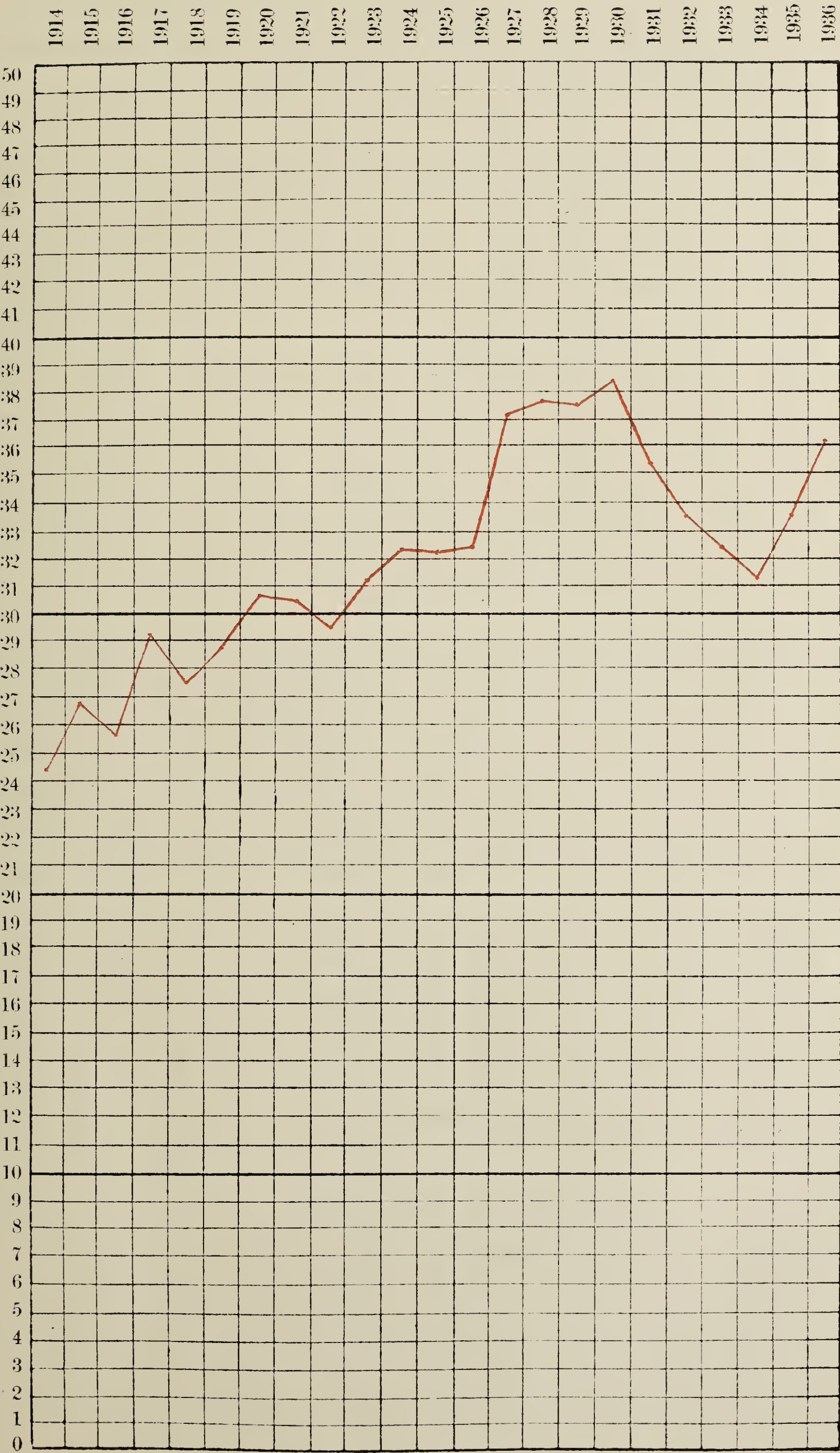
Race.	Males.	Females.	Total.	Per cent. of Total.
European ...	778	521	1,299	1
Eurasian ...	1,007	1,180	2,187	1
Chinese ...	64,787	47,299	112,086	68
Malay ...	10,648	10,537	21,185	13
Indian ...	20,276	6,428	26,704	16
Others ...	1,093	857	1,950	1
Total ...	98,589	66,822	165,411	100

2. BIRTHS.

There were 5,975 births registered of whom 3,125 were males and 2,850 females, the birth rate being 36.12 per thousand. The figures for 1935 were, births 5,452 and birth rate 33.61.

Reckoned on the estimated female population alone the birth rate was 89.42 per thousand compared with 86.29 per thousand in 1935.

PENANG MUNICIPALITY
BIRTH RATES.



The number of births and birth rates for the various races were as follows:—

TABLE II.

Race.	Number of births			Birth rate per thousand	
	Males	Female	Total	Total population	Female population
European ...	32	22	54	41.57	103.65
Eurasian ...	27	18	45	20.58	38.14
Chinese ...	2,391	2,155	4,546	40.56	96.11
Malay ...	260	257	517	24.40	49.07
Indian ...	397	375	772	28.91	120.10
Others ...	18	23	41	21.03	47.84

A comparison with the births registered during the previous ten years is shown here:—

TABLE III.

Year	European	Eurasian	Chinese	Malay	Indian	Others	Total
1926	51	55	3,193	585	514	36	4,434
1927	61	75	3,714	638	631	33	5,151
1928	58	52	3,928	595	661	38	5,332
1929	45	48	3,970	663	656	28	5,410
1930	61	56	4,084	674	730	25	5,630
1931	49	58	3,899	596	677	36	5,315
1932	50	63	3,739	568	679	30	5,129
1933	32	52	3,655	587	709	17	5,052
1934	39	39	3,656	508	709	26	4,977
1935	65	43	4,060	494	756	34	5,452
Average for ten years	51	54	3,790	591	672	30	5,188
1936	54	45	4,546	517	772	41	5,975

3. DEATHS.

The gross total of deaths within Municipal limits during the year was 3,659 and crude death rate 22.12; of this number 444 were not normally resident in Penang and had been less than three months within Municipal limits. Omitting these we have 3,215 deaths and a corrected death rate of 19.44 per thousand.

The following table shows the distribution of the deaths in age groups and races.

TABLE IV.

RACE	SEX	AGES.													TOTAL.	GRAND TOTAL
		Under 1 mth.	2-3 mths.	4-12 mths.	1-5 yrs.	6-15 yrs.	16-25 yrs.	26-35 yrs.	36-45 yrs.	46-55 yrs.	56-65 yrs.	66-75 yrs.	Over 75 yrs.	Unknown		
European ...	M	—	—	—	—	—	—	—	—	1	—	—	1	—	2	6
	F	—	—	—	—	—	1	—	—	—	1	1	1	—	4	
Eurasian ...	M	—	—	—	1	—	2	—	—	1	1	3	—	—	8	25
	F	—	1	—	1	—	1	—	—	2	3	7	2	—	17	
Chinese ...	M	107	84	84	121	37	78	137	180	197	195	58	31	—	1309	2224
	F	99	83	99	105	36	62	110	76	63	78	60	44	—	915	
Malay ...	M	14	30	16	22	11	14	15	31	26	32	13	12	—	236	472
	F	10	23	15	18	11	37	32	23	13	21	17	16	—	236	
Indian ...	M	31	7	11	16	8	25	53	47	35	44	10	5	—	292	462
	F	20	6	10	17	8	37	26	10	12	15	2	7	—	170	
Others ...	M	—	1	—	2	—	2	1	—	1	1	2	1	—	11	26
	F	2	1	1	—	—	1	2	1	3	1	1	2	—	15	
Total ...	M	152	122	111	162	56	121	206	258	261	273	86	50	—	1858	3215
	F	131	114	125	141	55	139	170	110	93	119	88	72	—	1357	
GRAND TOTAL ...		283	236	236	303	111	260	376	368	354	392	174	122	—	3215	

Compared with 1935, the Chinese deaths have decreased by 43 and the Indian deaths by 7; the Malay deaths have increased by 58.

The total deaths of each race in the last ten years are shown here.

TABLE V.

Year	European	Eurasian	Chinese	Malay	Indian	Others
1927	11	29	2,664	550	758	33
1928	11	24	2,544	434	623	32
1929	7	27	2,388	465	560	33
1930	14	23	2,245	409	549	19
1931	10	26	2,244	451	489	21
1932	6	28	2,186	474	490	16
1933	6	27	2,202	485	430	22
1934	2	26	2,385	564	485	30
1935	5	34	2,267	414	469	17
1936	6	25	2,224	472	462	26

A comparison of the births and deaths of the different races may be of interest.

TABLE VI.

Race	Births	Birth Rate per thousand	Deaths	Death Rate per thousand
European	54	41.57	6	4.62
Eurasian	45	20.58	25	11.43
Chinese	4,546	40.56	2,224	19.84
Malay	517	24.40	472	22.28
Indian	772	28.91	462	17.30
Others	41	21.03	26	13.33

There were 220 still-births reported during the year.

4. INFANT MORTALITY.

Table VII shows according to race the infant mortality, that is, deaths of children under one year of age per 1,000 births occurring during the same period, and a comparison with 1935.

TABLE VII.

RACE.		Births	Deaths under one year.	Infant deaths per thousand births.	
		1936		1936	1935
European	...	54	—	—	31
Eurasian	...	45	1	22	186
Chinese	...	4,546	556	122	155
Malay	...	517	108	209	134
Indian	...	772	85	110	130
Others	...	41	5	122	59
Total	...	5,975	755	126	148

The chief causes of infant deaths and the mortality compared with that in previous years from the same causes are given in Table VIII.

TABLE VIII.

Chief causes of infant deaths	Infant deaths per thousand births.									
	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Intestinal diseases ...	17	17	18	23	17	20	18	20	25	25
Respiratory diseases ...	32	32	31	26	28	27	27	42	38	24
Prematurity and Debility	29	29	25	21	19	19	20	27	27	24
Convulsions ...	62	62	57	50	45	44	48	34	32	27

These causes accounted for 593 of the 755 infant deaths which occurred.

159 infants were certified as having died from convulsions; the corresponding figure for 1935 was 172.

Table VIII is unreliable, the only figures that may be used with any exactitude for comparison are those shown in Table VII, and in the Infant Mortality chart.

PENANG MUNICIPALITY
INFANT MORTALITY



NOTE:—Registration of births is believed to have been more accurate from September, 1920.

Table IX is given below to show a comparison between births, infant mortality and general death rate for the preceding ten years and for 1936.

TABLE IX.

Year	Estimated population	Births		Deaths under 1 year		Deaths at all ages			Corrected Rate
		Total	Rate per thousand population	Total	Rate per thousand births	Crude Total	Corrected Total	Crude Rate	
1926	136,000	4,434	32.60	705	159	4,396	3,570	32.32	26.25
1927	138,635	5,151	37.15	816	158	4,860	4,045	35.05	29.18
1928	141,348	5,332	37.72	826	155	4,670	3,668	33.04	25.95
1929	144,114	5,410	37.54	815	151	4,126	3,480	28.63	24.15
1930	146,935	5,630	38.32	809	144	3,939	3,259	26.81	22.18
1931*	149,964	5,315	35.44	690	130	3,710	3,241	24.74	21.61
1932	152,908	5,129	33.54	688	134	3,569	3,200	23.34	20.93
1933	156,014	5,052	32.38	737	146	3,592	3,172	23.02	20.33
1934	159,085	4,977	31.28	777	156	3,935	3,492	24.73	21.95
1935	162,217	5,452	33.61	807	148	3,709	3,206	22.86	19.76
Average for the preceding ten years	148,722	5,188	34.88	767	148	4,051	3,433	27.24	23.08
1936	165,411	5,975	36.12	755	126	3,659	3,215	22.12	19.44

* Census year.

5. CAUSE OF DEATH.

Table X shows the age, sex and cause of death certified: 956 of the certificates were from Hospitals, 752 from Private Practitioners, 21 from the Coroner and 1,486 or 46.22% of the total from the Deputy Registrar of Deaths.

This is a decrease in the certification of deaths by the Deputy Registrar and indicates more readiness on the part of the public to seek medical attention. So far as it goes this is satisfactory as it tends to more accurate diagnosis of the cause of death but it is regrettable that so often in the early stages of disease recourse is made to "quack" treatment.

In view of the small number of post-mortems possible this increase in medical attention would appear to be the most satisfactory way of reducing the number of undiagnosed deaths given under "unspecified fever."

Since the year 1921, the Deputy Registrar of Deaths has been instructed to use the term "unspecified fever" for the cause of death, where the information obtainable does not seem to warrant a more definite diagnosis.

TABLE X.

DEATHS.	SEX	AGES													Total	Grand Total
		Under 1 mth.	2-3 mths.	4-12 mths.	1-5 yrs.	6-15 yrs.	16-25 yrs.	26-35 yrs.	36-45 yrs.	46-55 yrs.	56-65 yrs.	66-75 yrs.	Over 75 yrs.	Un-known		
Enteric fever ...	M.	—	—	—	—	—	3	2	3	—	2	—	—	—	10	23
	F.	—	—	—	—	2	6	2	3	—	—	—	—	—	13	
Diarrhoea ...	M.	15	11	11	11	1	—	1	5	4	3	—	—	—	62	110
	F.	4	12	10	12	—	3	2	1	1	2	1	—	—	48	
Dysentery ...	M.	—	—	1	—	2	—	1	2	3	4	1	—	—	14	23
	F.	—	—	—	3	—	—	3	—	2	1	—	—	—	9	
Remittent fever ...	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	F.	—	—	—	—	—	—	1	—	—	—	—	—	—	1	
Unspecified fever ...	M.	4	22	20	39	18	22	24	25	24	20	1	1	—	220	406
	F.	7	16	26	31	17	22	29	13	15	7	2	1	—	186	
Syphilis ...	M.	—	1	—	—	—	1	2	2	5	4	1	1	—	17	22
	F.	1	1	—	—	—	—	1	—	2	—	—	—	—	5	
Puerperal fever	F.	—	—	—	—	—	10	6	1	—	—	—	—	—	17	17
Other septic diseases ...	M.	4	—	—	3	1	5	3	5	6	5	2	2	—	36	56
	F.	1	1	1	3	2	1	2	4	2	1	2	—	—	20	
Pulmonary Tuberculosis	M.	—	—	—	2	2	28	54	68	44	34	4	1	—	237	304
	F.	—	1	—	1	2	24	16	12	7	3	1	—	—	67	
Other tubercular diseases	M.	—	—	2	5	—	1	4	3	—	1	—	—	—	16	32
	F.	—	—	2	7	4	—	1	1	—	1	—	—	—	16	
Leprosy ...	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
	F.	—	—	—	—	—	—	2	—	1	1	—	1	—	5	
Tetanus ...	M.	5	—	—	—	—	—	—	1	—	1	—	—	—	7	11
	F.	2	1	—	—	—	—	—	—	1	—	—	—	—	4	
Diphtheria ...	M.	—	—	1	3	2	—	—	—	—	—	—	—	—	6	14
	F.	—	—	—	4	4	—	—	—	—	—	—	—	—	8	
Influenza	M.	—	—	—	—	—	—	—	—	1	2	—	1	—	4	7
	F.	—	—	—	—	—	—	1	—	—	—	1	1	—	3	
Erysipelas ...	M.	—	—	—	—	—	—	—	—	1	—	—	—	—	1	2
	F.	—	1	—	—	—	—	—	—	—	—	—	—	—	1	
Whooping Cough ...	M.	—	—	1	—	—	—	—	—	—	—	—	—	—	1	1
	F.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Cerebro-Spinal Meningitis		—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
		—	—	1	—	—	—	—	—	—	—	—	—	—	1	
Carried forward	M.	28	34	37	63	26	60	91	114	88	76	9	6	—	632	1035
	F.	15	33	39	61	31	66	66	35	31	16	7	3	—	403	

DEATHS.	SEX	AGES														Total	Grand Total
		Under 1 mth.	2-3 mths.	4-12 mths.	1-5 yrs.	6-15 yrs.	16-25 yrs.	26-35 yrs.	36-45 yrs.	46-55 yrs.	56-65 yrs.	66-75 yrs.	Over 75 yrs.	Un- known			
Brought forward	M.	28	34	37	63	26	60	91	114	88	76	9	6	—	632	1035	
	F.	15	33	39	61	31	66	66	35	31	16	7	3	—	403		
Malaria ...	M.	—	—	—	—	—	3	8	4	4	1	1	—	—	21	32	
	F.	—	—	—	—	1	3	5	1	—	—	1	—	—	11		
Worms ...	M.	—	—	—	2	—	—	—	1	—	—	—	—	—	3	6	
	F.	—	—	—	2	—	1	—	—	—	—	—	—	—	3		
Rheumatism ...	M.	—	—	—	—	—	—	1	—	2	1	—	—	—	4	9	
	F.	—	—	—	—	—	1	—	—	—	3	1	—	—	5		
Cancer ...	M.	—	—	—	—	—	—	3	7	9	5	1	1	—	26	48	
	F.	—	—	—	—	—	—	2	4	6	6	4	—	—	22		
Anaemia ...	M.	—	—	—	—	—	—	1	1	5	—	1	—	—	8	21	
	F.	—	—	1	—	—	2	7	2	—	1	—	—	—	13		
Beri-beri ...	M.	—	—	—	—	—	9	12	16	9	5	1	—	—	52	63	
	F.	—	—	—	—	—	5	5	—	—	1	—	—	—	11		
Premature birth ...	M.	44	—	—	—	—	—	—	—	—	—	—	—	—	44	102	
	F.	54	4	—	—	—	—	—	—	—	—	—	—	—	58		
Old age ...	M.	—	—	—	—	—	—	—	—	—	46	34	29	—	109	226	
	F.	—	—	—	—	—	—	—	—	—	37	38	42	—	117		
Convulsions ...	M.	14	40	25	24	2	—	—	—	—	—	—	—	—	105	199	
	F.	16	31	33	13	1	—	—	—	—	—	—	—	—	94		
Other diseases of Nervous system	M.	2	—	1	3	1	3	5	10	3	3	1	—	—	32	75	
	F.	—	—	1	2	3	8	12	7	3	6	1	—	—	43		
Organs of special sense	M.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	5	
	F.	1	3	—	—	—	—	—	—	—	—	—	—	—	4		
Circulatory system ...	M.	8	1	1	—	2	10	19	32	38	52	14	5	—	182	284	
	F.	1	2	2	—	2	9	12	15	15	23	10	11	—	102		
Carried forward	M.	97	75	64	92	31	85	140	185	158	189	62	41	—	1219	2105	
	F.	87	73	76	78	38	95	109	64	55	93	62	56	—	886		

DEATHS.	SEX	AGES													Total	Grand Total
		Under 1 mth.	2-3 mths.	4-12 mths.	1-5 yrs.	6-15 yrs.	16-25 yrs.	26-35 yrs.	36-45 yrs.	46-55 yrs.	56-65 yrs.	66-75 yrs.	Over 75 yrs.	Un- known		
Brought forward	M.	97	75	64	92	31	85	140	185	158	189	62	41	—	1219	2105
	F.	87	73	76	78	38	95	109	64	55	93	62	56	—	886	
Bronchitis	M.	2	13	7	11	2	3	5	19	26	22	3	2	—	115	178
	F.	3	8	6	8	1	1	1	11	13	6	4	1	—	63	
Pneumonia	M.	1	2	3	9	6	9	15	13	15	9	5	2	—	89	147
	F.	—	1	1	14	2	8	10	3	4	6	5	4	—	58	
Other diseases of respiratory system	M.	13	8	29	25	4	11	13	14	13	10	1	1	—	142	253
	F.	10	11	24	25	10	9	11	6	4	—	1	—	—	111	
Enteritis	M.	18	12	4	16	—	1	5	2	2	3	—	1	—	64	123
	F.	15	13	13	10	—	1	1	—	3	2	1	—	—	59	
Diseases of liver	M.	3	2	—	—	2	—	2	4	6	8	2	—	—	29	36
	F.	2	1	—	—	—	—	1	1	—	2	—	—	—	7	
Other diseases of digestive System	M.	2	4	1	1	2	4	8	7	13	8	—	1	—	51	83
	F.	2	2	1	1	1	7	7	5	3	—	2	1	—	32	
Lymphatic System		—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
		—	—	—	—	1	1	—	—	—	—	—	—	—	2	
Urinary System	M.	—	1	1	3	3	5	12	7	18	21	11	2	—	84	171
	F.	—	—	2	3	1	9	16	17	9	10	12	8	—	87	
Generative organs	M.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	F.	—	—	—	—	—	1	—	—	—	—	—	—	—	1	
Child birth and abortion	F.	—	—	—	—	—	3	10	3	—	—	—	—	—	16	16
Bones and Joints	M.	—	1	—	—	1	1	—	—	1	—	—	—	—	4	6
	F.	—	1	—	1	—	—	—	—	—	—	—	—	—	2	
Accident and Negligence	M.	—	—	—	3	5	—	4	2	—	—	—	—	—	14	19
	F.	—	—	—	1	1	—	3	—	—	—	—	—	—	5	
Homicide, Suicide and Execution	M.	—	—	—	—	—	2	2	1	5	1	—	—	—	11	13
	F.	—	—	—	—	—	1	1	—	—	—	—	—	—	2	
Debility	M.	16	4	2	2	—	—	—	1	—	1	—	—	—	26	46
	F.	11	4	2	—	—	2	—	—	—	—	—	1	—	20	
Unknown	M.	—	—	—	—	—	—	—	—	1	—	—	—	—	1	2
	F.	1	—	—	—	—	—	—	—	—	—	—	—	—	1	
Diabetes	M.	—	—	—	—	—	—	—	3	3	1	2	—	—	9	14
	F.	—	—	—	—	—	1	—	—	2	—	1	1	—	5	
Total	M.	152	122	111	162	56	121	206	258	261	273	86	50	—	1858	3215
	F.	131	114	125	141	55	139	170	110	93	119	88	72	—	1357	

A comparison between the number of deaths attributed to some of the principal causes in 1936 and in the preceding ten years is shown here.

TABLE XI.

Disease	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	Average for pre- ceding ten years	1936
Pulmonary Tuberculosis...	460	422	432	485	374	420	324	232	276	251	368	304
Pneumonia ...	349	413	312	300	249	231	120	116	155	159	240	147
Bronchitis ...	91	142	190	133	122	106	155	190	175	154	146	178
Other Respiratory Diseases ...	82	140	168	190	145	226	224	227	400	297	210	253
Circulatory System ...	174	220	188	204	190	190	224	256	317	266	223	284
Enteric Fever ...	8	12	23	14	15	25	37	21	16	24	20	23
Enteritis ...	42	36	35	44	62	68	72	51	69	89	57	123
Dysentery ...	89	87	94	42	49	58	32	27	36	35	55	23
Diarrhoea ...	144	149	154	157	158	116	110	108	93	109	130	110
Other Diseases of Digestive System ...	39	39	49	52	62	51	64	48	59	80	54	83
Urinary System ...	106	144	103	111	98	105	145	162	214	140	133	171
Malaria ...	134	147	168	103	89	72	57	51	25	37	88	32
Unspecified Fever ...	809	767	413	435	400	427	507	523	507	443	523	406
Syphilis ...	26	31	43	30	53	48	53	46	48	33	41	22
Convulsions ...	318	438	424	380	360	316	303	320	213	216	329	199
Other Septic Diseases ...	71	87	77	69	85	80	72	79	69	76	77	56
Beri-beri ...	9	16	11	30	14	30	50	92	114	57	42	63
Debility ...	62	61	79	56	69	51	50	52	56	67	60	46
Premature Birth ...	72	63	85	82	62	64	67	61	89	91	74	102
Old Age ...	211	293	290	242	255	236	237	221	254	249	249	226

The distribution of the chief causes of death among the various races is shown in Table XII.

TABLE XII.

CAUSE OF DEATH.	European	Eurasian	Chinese	Malay	Indian	Others	Total
Pulmonary Tuberculosis ...	—	2	239	19	39	5	304
Pneumonia ...	—	2	88	7	49	—	147
Bronchitis ...	—	1	138	13	22	4	178
Other Respiratory diseases ...	—	—	197	11	44	1	253
Circulatory System ...	1	4	228	18	31	2	284
Enteric Fever ...	—	—	18	4	1	—	23
Enteritis ...	—	—	109	4	9	1	123
Dysentery ...	—	—	15	1	7	—	23
Diarrhoea ...	—	—	89	9	12	—	110
Other Diseases of Digestive System ...	—	—	54	6	23	—	83
Urinary System ...	2	3	119	25	20	2	171
Malaria ...	—	1	20	1	10	—	32
Unspecified Fever ...	—	—	209	138	56	3	406
Syphilis ...	—	—	18	1	3	—	22
Convulsions ...	—	1	113	73	11	1	199
Other Septic Diseases ...	—	1	37	9	9	—	56
Beri-beri ...	—	—	55	8	—	—	63
Debility ...	—	—	27	5	13	1	46
Premature Birth ...	—	—	69	11	21	1	102
Old Age ...	1	2	126	70	23	4	226

Details are appended of the sources of certification of the principal causes of death.

TABLE XIII.

Cause of death	Number certified by			
	Hospitals	Private Practitioners	Deputy Registrar of Deaths	Coroner
Pulmonary Tuberculosis ...	183	57	64	—
Pneumonia ...	68	66	13	—
Bronchitis ...	6	25	147	—
Other Respiratory Diseases ...	91	62	100	—
Circulatory System ...	83	103	94	4
Enteric Fever ...	13	10	—	—
Enteritis ...	47	53	22	1
Dysentery ...	12	5	6	—
Diarrhoea ...	29	13	68	—
Other Diseases of Digestive System ...	50	24	9	—
Urinary System ...	25	52	94	—
Malaria ...	16	16	—	—
Unspecified Fever ...	11	60	335	—
Syphilis ...	17	3	2	—
Convulsions ...	2	39	158	—
Other Septic Diseases ...	26	14	16	—
Beri-beri ...	46	12	1	4
Debility ...	13	10	23	—
Premature Birth ...	38	20	44	—
Old Age ...	14	14	198	—

6. SEASONAL MORTALITY.

The deaths and death rate for each month are here recorded.

TABLE XIV.

Month.	Deaths.	Death rate per thousand	Month	Deaths.	Death rate per thousand
January ..	303	21.63	July ..	277	19.77
February ..	272	20.75	August ..	234	16.70
March ..	275	19.63	September ..	245	18.07
April ..	300	22.13	October ..	232	16.56
May ..	287	20.49	November ..	256	18.88
June ..	283	20.87	December ..	251	17.92

7. INFECTIOUS DISEASES.

Table XV shows the incidence among the various races of the principal infectious diseases which occurred during the year.

TABLE XV.

Race	Sex	Chicken-pox	Enteric Fever	Tuberculosis	Influenza	Puerperal Fever	Diphtheria	Measles	Erysipelas	Mumps	Cerebro-Spinal Meningitis	Whooping Cough	Total
European	M	6	—	—	1	—	—	—	—	—	—	—	7
	F	3	—	—	—	—	—	—	—	—	—	—	3
Eurasian	M	—	—	2	—	—	—	—	—	—	—	—	2
	F	—	—	—	1	—	1	—	—	—	—	—	2
Chinese	M	14	26	207	3	—	11	1	4	—	1	1	268
	F	6	18	57	2	9	18	—	2	—	—	—	112
Malay	M	7	2	13	—	—	2	3	—	—	—	—	27
	F	—	4	7	—	8	—	1	—	—	—	—	20
Indian	M	124	7	31	—	—	1	3	—	17	—	—	183
	F	18	2	14	—	6	2	—	—	1	—	—	48
Others	M	—	—	—	—	—	—	—	—	—	—	—	—
	F	—	1	5	—	—	—	—	—	—	—	—	6
Total	M	151	35	253	4	—	14	7	4	17	1	1	487
	F	27	25	83	3	23	21	1	2	1	—	—	186
Grand Total		178	60	336	7	23	35	8	6	18	1	1	673

Table XVI shows the main figures for the last 28 years relating to births, deaths, and infant mortality.

TABLE XVI.

Year	Total number of		Birth rate	Crude death rate	Infant Mortality
	Births	Deaths (crude)			
1909	1656	3923	16.15	38.25	337 (a)
1910	1905	3912	18.39	37.76	290
*1911	2133	4045	21.02	39.88	287 (b)
1912	2421	3829	23.69	37.47	261
1913	2464	3794	23.95	36.86	284
1914	2545	3774	24.55	36.40	260
1915	2808	3390	26.89	32.46	239 (c)
1916	2708	3341	25.74	31.76	255
1917	3099	4071	29.25	38.42	269
1918	2940	4909	27.55	45.99	229
1919	3203	4466	28.86	41.54	244
1920	3321	4090	30.67	37.75	205
*1921	3768	3775	30.56	30.61	167 (d)
1922	3738	3768	29.71	29.94	166
1923	4028	3801	31.39	29.62	155 (e)
1924	4257	3811	32.54	29.13	151
1925	4318	3858	32.38	28.93	147
1926	4434	4396	32.60	32.32	159
1927	5151	4860	37.15	35.05	158
1928	5332	4670	37.72	33.04	155
1929	5410	4126	37.54	28.63	151
1930	5630	3939	38.32	26.81	144
*1931	5315	3710	35.44	24.74	130
1932	5129	3569	33.54	23.34	134
1933	5052	3592	32.38	23.02	146
1934	4977	3935	31.28	24.73	156
1935	5452	3709	33.61	22.86	148
1936	5975	3659	36.12	22.12	126 (f)

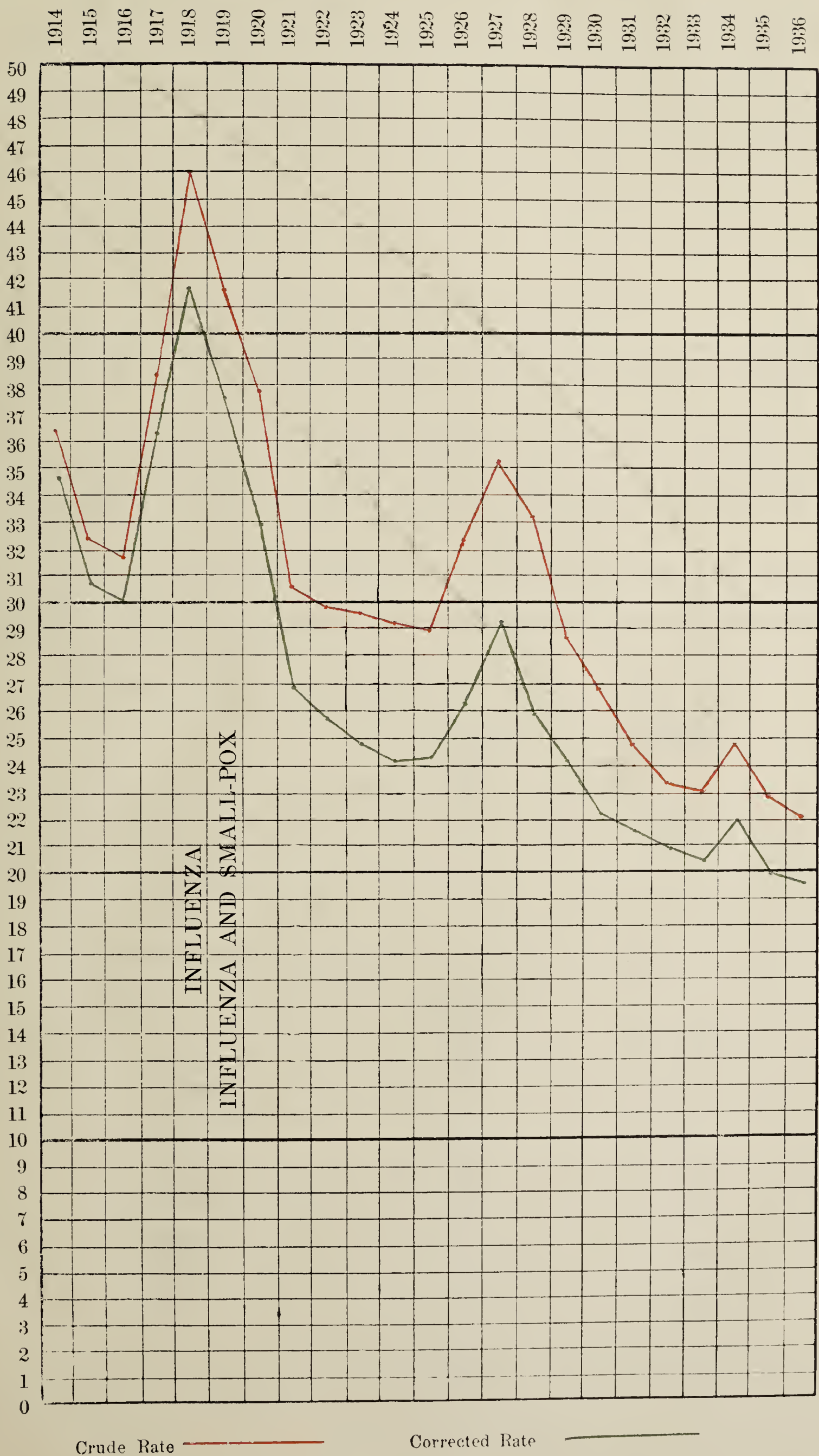
*Census year

Note:—

- (a) 1st January, 1909—one District Nurse
- (b) 1st January, 1911—two District Nurses.
- (c) September, 1915—Maternity Hospital opened.
- (d) 1st December, 1921—two whole-time and seven part-time District Nurses.
- (e) 1st May, 1923—two whole-time and eight part-time District Nurses.
- (f) 1st August, 1936—Lady Assistant Medical Officer appointed and two Maternity and Child Welfare Clinics started.

PENANG MUNICIPALITY

DEATH RATES.



8. REGISTRATION OF BIRTHS AND DEATHS.

Notification of births and deaths may be made at any Police Station or at the Municipal Offices. Births are notifiable within fourteen days, or, on payment of a late fee, within forty two days. By earlier notification many of the babies who die within the first week of birth would probably be saved as such would enable the Health Sisters to see the mother and baby soon after the birth. We cannot, however, enforce earlier notification under the present law but the number of early notifications continued to increase due to midwives notifying their cases by completing the forms with which they are supplied, and despatching them to the Health Office.

Deaths must be notified within twelve hours, or, on payment of a late fee, within three days.

9. MATERNITY AND CHILD WELFARE.

During this year by the appointment of a Lady Assistant Medical Officer, Dr. Y. H. Hoashoo, and the opening of another Maternity and Child Welfare Centre, a real beginning has been made at last in a Maternity and Child Welfare Scheme for Penang Municipality.

The equipping of a house in Kimberley Street as a Welfare Centre was completed in July and work commenced there in August. Sessions were held on Mondays, Wednesdays, Fridays and Saturdays at this new centre, and the Maternity and Child Welfare Centre which had been so successfully started by the Deputy Health Officer at the Coolie Lines Clinic on Wednesdays was extended to sessions on Tuesdays and Thursdays.

From August to December inclusive, there were 921 first-attendances and 1,663 re-attendances at the Kimberley Street Centre and 161 first-attendances and 645 re-attendances at the Coolie Lines Centre. About 50% of these first-attendances were made by mothers with babies under 12 months old.

The racial distribution of the first-attendances at both centres was as follows:—

			<u>Kimberley</u>		<u>Coolie Lines</u>
			<u>Street</u>		
Chinese	..	..	816	..	46
Tamils	..	..	80	..	86
Malays	..	..	9	..	26
Eurasians	..	..	8	..	3
North Indians	..	..	6	..	—
Japanese	..	..	2	..	—

The disease distribution percentage of first-attendances was as follows:—

			<u>Kimberley</u>		<u>Coolie Lines</u>
			<u>Street</u>		
Ascariasis	..	..	3.91	..	22.7
Bronchitis	..	..	17.17	..	5.6
Conjunctivitis	..	..	0.76	..	Nil
Eczema	..	..	4.34	..	Nil
Furunculosis	..	..	8.02	..	3.1
Jaundice	..	..	0.65	..	Nil
Malnutrition	..	..	7.50	..	4.4
Nephritis	..	..	0.32	..	Nil
Otorrhoea	..	..	1.41	..	0.69
Phimosis	..	..	3.91	..	4.4
Rickets	..	..	1.95	..	Nil
Scabies	..	..	Nil	..	1.9
			<hr/>		<hr/>
			49.94%		42.79%
			<hr/>		<hr/>

The remainder of the first-attendances were not suffering from any definite disease but were given advice as to how to keep fit and encouraged to attend regularly for weighing in order to ensure that a good standard of health is being maintained.

It is significant that Bronchitis is much more prevalent in the Kimberley Street area than at the Coolie Lines. This suggests a healthier open air type of life with a minimum of clothing at the Coolie Lines as compared with life in the congested town areas which lack open playing spaces.

The comparatively higher incidence of Ascariasis at the Coolie Lines shows the need for education in personal hygiene.

Infant Feeding.

It has been noted that practically all the children under one year old at the Coolie Lines are breast fed whereas only some 50% of those at Kimberley Street have the benefit of their mothers' milk. This no doubt accounts to a large extent for the better general health of the babies at the former centre. It is one of the main objects of the centres to educate the mothers in the value of breast feeding and in the few cases where with proper ante-natal care this cannot be made possible, demonstrations are given as to how best to supplement or substitute nature's ideal method of feeding.

Ante-natal Work.

On Saturday mornings at the Kimberley Street Centre special attention is given to the education of expectant mothers, 42 of whom attended the centre, mostly Chinese. Three of these were found to have Albuminuria and were recommended for hospital treatment.

At the Coolie Lines about 30 ante-natal cases were examined.

Birth Control.

At the request of four mothers where advice on this subject was indicated, demonstrations on the proper use of contraceptives were given.

The very important home-visiting branch of this work was continued under the supervision of two whole-time Health Sisters—Miss H. Flint and Miss F. M. Sloan. The area covered by this work is confined to the more thickly populated part of the town, the area being divided into two, and each half is supervised by a Health Sister and four nurses. Two Municipal cars are kept for the use of the Health Sisters. Eight locally qualified midwives are employed as part-time nurses. In the past it was the rule to engage these midwives for a period of six months and during the month preceding her appointment a Health Sister introduced each to the district in which she would be employed, instructing her in the routine of the work. By these frequent changes it was found that a large part of the teaching which had been given to the midwives never had an opportunity for practical application in the homes as some of the more promising of these midwives were just beginning to impart their knowledge for the benefit of mothers and babies when they had to give way to newcomers. We gradually ceased these six monthly changes and by continuing the midwife for a longer period in one area it was found that her interest in her work increased with consequent benefit to the mothers and babies in that district. I consider that it is to better continuity in the home visiting branch of the work that the improvement in the infantile mortality is to be ascribed more than to any other factor. The total number of visits made by the above staff was 65,174, an increase of 3,832 over 1935. I would point out here that this work has increased in volume from year to year.

At the end of the year the midwives registered under the Midwives Ordinance (Chapter 67) were

Class	"A"	---	77
Class	"B"	---	271
Class	"C"	---	10

Class "A" include those who after a twelve months' course of practical and theoretical training in midwifery obtain the diploma granted under the Midwives Ordinance.

Class "B" are those who after a non-specified period of practice in midwifery gain the certificate under the Midwives Ordinance.

Class "C" comprise the local "bidans" or unqualified midwives who were registered after the Central Midwives Board (S.S.) had certified that they possessed a competent practical knowledge of midwifery. It was hoped in my 1935 Report that, due to the unsatisfactory work of this group, their number would gradually be reduced—there were 12 in 1935, and two of this number have retired.

The following is the routine method of getting in touch with the mother and newly born child. When a birth is notified, a Sanitary Sub-Inspector proceeds to verify or correct the address given—this is found to be essential due to the large number of wrong addresses supplied. Also, a Sanitary Sub-Inspector calls at the Maternity Hospital daily to obtain the addresses of discharged cases. A list of the addresses is given daily to the Health Sisters who then visit the houses to see what is required. If the case is already under medical supervision the responsibility rests on the practitioner attending. If a certified midwife is in attendance she is expected to continue daily visits for the first ten days. All other cases are looked after by the part-time nurses generally till the child is three months old, and it is the object thereafter that the child is taken to one of the Maternity and Child Welfare Centres.

The infant mortality rate for 1936 was 126 as against 148 in 1935.

129 babies died under the age of seven days and 88 between the ages of seven and 14 days. Of the 755 infants who died under the age of one year, 283 were less than one month old and 236 were between one month and three months old.

10. VACCINATION.

Within Municipal limits, public vaccination is performed chiefly by our staff.

Two sub-inspectors act as whole-time vaccinators.

When a notification of birth is received, a sub-inspector visits to verify the address, and he advises the parents of the value of early vaccination and delivers the formal vaccination notice as required by law.

Six months after the birth, if no report has been received notifying the completion of vaccination, or the removal from town or the death of the child, the house is revisited and the parents reminded both verbally and by a formal notice that vaccination is overdue. Thus, practically all vaccinations are done by house to house visitation and the results are satisfactory.

All new unvaccinated applicants for employment by the Municipality are vaccinated at the Health Office following a satisfactory health examination.

5,975 births were reported during the year, an increase of 523 over 1935.

Our staff did 3,523 vaccinations of which 3,281 were primary and 242 secondary. In addition, Government vaccinators during the year performed 131 primary vaccinations and 1451 secondary vaccinations, mostly in schools, while 1,034 primary vaccinations were performed by private practitioners. No serious results were reported.

11. ANTI-MOSQUITO WORKS.

The permanent residents in Penang often fail to recognise the blessings which they enjoy in freedom from the mosquito pest, and it is left to the visitor to the town to exclaim in surprise that he has not used a mosquito net nor seen a mosquito. During 1936 we have

been exceedingly free from mosquitoes with no very marked periodical increase. During October there was a slight increase in the number of mosquitoes, and in order to find out the cause of this we organised one or two mosquito "drives" in parts of the residential areas from which complaints were being received. The results were as follows:—

Number of houses in which larvae were found	...	...	214
Number of individual specimens found	...	...	243

The breeding places of these 243 specimens were:

Bathing tanks and receptacles in bathroom	...	...	74
Tins, jars, etc. in compound	...	...	86
Tins, jars, etc. inside house	...	...	11
Cups under meat safe	...	...	23
Flower pots and gardeners' equipment	...	...	12
Tree pockets	...	...	17
Roof gutters	...	...	1
Receptacles for birds and fowls	...	...	5
Garage pits	...	...	2
Excavations for sanitary installation	...	...	3
Miscellaneous	...	...	9
Total			243

These hardly call for comment as a glance at the breeding sites shows them to be the result of sheer negligence, and warns even the best of us how easy it is to succumb to a state of indifference towards preventive work when there is no constant irritant reminding us of the imminent danger in our midst. There is marked evidence in these special investigations of the lack of the spirit of true citizenship which makes for co-operation and of the tendency to sit back and complain that the work which one ought to be doing, is not being done by others.

A record of the specimens brought to the office for identification is as follows:—

<u>Species</u>	<u>Number</u>	<u>Chief breeding sites</u>
Anophelines		
A. maculatus	... 8	Seepages
A. malayensis	... 27	Wells Building excavations Vegetable gardens Ornamental ponds
A. kochi	... 1	Pool
A. leucosphyrus	... 1	Stream
A. tessellatus	... 1	Marsh
Culecines		
	Per cent.	
Culex	... 28	As enumerated under mosquito "drives"
Aedes aegypti	... 40	
Aedes albopictus	... 30	
Aedes armigeres malaya	2	

Deaths from Malaria. All such cases are thoroughly investigated, and the following are the findings regarding the probable origin of infection in each case of the thirty-two deaths reported.

F. M. S.....	1
Kedah	6
Penang (Municipality).....	1
Penang (Rural).....	4
Perak.....	7
Perlis.....	1
Province Wellesley.....	4
Siam.....	1
Singapore.....	1
Unknown.....	6

The origin of the six "unknown" could not be traced, and the one recorded within Municipal limits is doubtful in that the diagnosis, made shortly before death, was symptomatic.

Our freedom from malaria in the Municipality is mainly due to the vigilance of the oiling gangs working in the hilly area, the danger zone, behind the town. Evidence of their successful efforts is shown in the fact that the number of malarial carrying mosquitoes found is the smallest during the past few years.

The total oil consumption for the year was 88,000 gallons of Anti-Malarial Mixture, the cost being \$14,437.50.

Towards the cost of work done on private property by the Health Department coolies the sum of \$1,806.00 was reimbursed.

12. TUBERCULOSIS.

The slight increase in the number of deaths from this disease may be accounted for by several factors, an important one of these being an increase in population adding to the overcrowding in already congested areas. There was a continuation in the improvement of unhealthy areas, supervision of common lodging houses, and the removal of as many as possible of the small ill-ventilated cubicles which crop up overnight often in houses already unfit for human habitation. From time to time in the annual reports, preventive measures are reiterated, and it is to be deplored that Tuberculosis is still, apart from "Unspecified Fever," our highest cause of mortality.

13. ENTERIC FEVER.

60 cases were reported: 44 were Chinese, 6 Malays, 9 Indians and 1 other nationality.

40 cases were treated in Hospital: 12 died and 28 recovered.

20 remained at home: 11 died and 9 recovered.

The total number of cases was 13 more than the number reported in 1935.

14. CHICKEN - POX.

178 cases were reported, 168 of which were admitted to the Quarantine Camp.

Of the total 9 were Europeans, 20 Chinese, 7 Malays and 142 Indians.

32 cases were under ten years of age, 146 were over that age. their ages ranging from 3 months to 62 years.

As usual the Indians showed a distinct susceptibility to this disease, the number affected being quite out of proportion to the size of the community.

15. PUERPERAL FEVER.

23 cases were reported compared to 17 in 1935.

9 were Chinese, 8 Malays and 6 Indians: 17 died and 6 recovered.

16. INFLUENZA

Under Ordinance No. 157 (Quarantine and Prevention of Disease) this is classified as a dangerous infectious disease.

7 cases were reported, 1 was European, 1 Eurasian and 5 Chinese. All died.

One case each was reported during the months of May, July, September and December, and 3 cases in August.

6 cases were notified by general practitioners, and 1 case by the Deputy Registrar of Deaths.

17. MEASLES.

This infectious disease is not notifiable under Ordinance No. 157 (Quarantine and Prevention of Disease). Each year some cases come under our attention, but the disease has never assumed epidemic proportions.

8 cases of Measles were reported, 1 Chinese, 4 Malays and 3 Indians. 6 cases were treated at the Quarantine Camp: all recovered. 1 case was treated in Hospital and 1 at home: both recovered.

18. ERYSIPELAS.

6 cases were reported: all were Chinese. They were treated in Hospital: 2 died and 4 recovered.

19. MUMPS.

18 cases were reported: all were Indians. They were treated at the Quarantine Camp and recovered.

20. CEREBRO-SPINAL MENINGITIS.

One case, a Chinese, aged 6 months, was reported in October. He was treated in Hospital and died.

21. WHOOPING COUGH.

One case, a Chinese, aged 6 months, was reported in October. He was treated at home and died.

22. DIPHTHERIA.

Year.	Notifications.			Deaths.
1936	...	35	...	14
1935	...	39	...	18

Of the fourteen fatal cases, one was notified three days before death, three were notified one day before death, and the **remaining ten** notifications were received almost at the same time as the death certificate. It is still all too evident from the frequency with which the date of death closely follows the date of notification that qualified medical attention has been sought too late. The incidence of this disease is not great, but the death rate is excessive being even higher than that of pre-antitoxin days in England—a most regrettable fact since there are few diseases which respond as **successfully** to early skilled treatment as consistently as does diphtheria.

I have to thank the Government Bacteriologist for his co-operation in the examination of swabs.

I show here the monthly incidence (Table XVII).

TABLE XVII.

DIPHTHERIA 1936.

Month.		Cases reported.	Deaths.
January	..	1	1
February	..	5	3
March	..	5	1
April	..	1	1
May	..	5	4
June	..	1	—
July	..	1	1
August	..	2	—
September	..	3	2
October	..	6	1
November	..	4	—
December	..	1	—
Total	..	35	14

TABLE XVIII.

DIPHTHERIA IN PENANG MUNICIPALITY.

	Estimated population (mid-year)	Year	Total cases reported	Deaths
Census (10th March)	100,429	1907	3	1
	101,469	1908	4	2
	102,520	1909	1	1
	103,582	1910	4	2
	101,182	1911	2	1
	102,167	1912	3	3
	102,913	1913	3	2
	103,664	1914	1	1
	104,420	1915	2	2
	105,183	1916	—	—
	105,950	1917	4	4
	106,723	1918	2	2
Census (25th April)	107,502	1919	4	3
	108,286	1920	1	1
	123,187	1921	5	4
	125,834	1922	4	2
	128,300	1923	4	4
	130,800	1924	4	2
	133,373	1925	8	6
	136,000	1926	6	5
	138,635	1927	8	5
	141,348	1928	15	5
	144,114	1929	11	5
	146,935	1930	20	10
Census (2nd April)	149,964	1931	23	9
	152,908	1932	29	13
	156,014	1933	46	15
	159,085	1934	28	13
	162,217	1935	39	18
	165,411	1936	35	14

INFECTIOUS DISEASES HOSPITAL, PERAK ROAD

214 patients and 45 contacts were admitted.

Details of disease and race are shown in Tables XIX and XX.

TABLE XIX.

Disease	Remaining on 31.12.35.	Admitted	Total	Discharged	Transferred	Died	Remaining on 31.12.36.
Chicken-pox	4	168	172	156	1	—	15
Diphtheria	—	1	1	1	—	—	—
Measles	—	8	8	7	1	—	—
Mumps	—	18	18	17	—	—	1
Scabies	—	15	15	15	—	—	—
Vaccinia	—	2	2	2	—	—	—
Observation	—	2	2	2	—	—	—
Contacts	—	45	45	44	—	—	1
Total	4	259	263	244	2	—	17

TABLE XX.

Race	Remaining on 31.12.35.	Admitted	Total	Discharged	Transferred	Died	Remaining on 31.12.36.
Chinese	—	26	26	26	—	—	—
Malays	—	25	25	23	—	—	2
Indians	4	204	208	191	2	—	15
Others	—	4	4	4	—	—	—
Total	4	259	263	244	2	—	17

NOTES.

54 cases were admitted on personal application.

There were patients in the Camp throughout the year.

One Tamil woman, who was suffering from Chicken-pox gave birth to a male child in the Camp.

23. CONSERVANCY.

As from the beginning of the year, the whole of the conservancy work with the exception of the disposal of refuse was transferred to the control of this department.

The cost of these services is largely governed by the quantity of refuse put out for collection and the number of occupied houses.

The amount of refuse collected during the year was 100,735 cubic yards which is 5,843 cubic yards below the amount collected during 1935 and 18,395 cubic yards below the highest amount collected in any one year which was 1930.

At the end of the year night-soil service was being carried out to 9,244 latrines, a decrease of only 15 in spite of the fact that the service was discontinued to 109 latrines where water closets had been substituted.

The annual expenditure on conservancy (Collection of Refuse and Night-Soil) amounted to \$281,121.93 being an increase of \$8,910.36 over the previous year.

The comparative figures of Conservancy Receipts and Expenditure for 1935 and 1936 are :—

		1935.	1936.	Increase.	Decrease.
Receipts	...	\$172,891.32	\$184,979.10	\$12,087.78	—
Expenditure	...	\$272,211.57	\$281,121.93	\$ 8,910.36	—

The revenue amounted to \$184,979.10, including the sum of \$2,142.87 being fines remitted from the Police Courts, making an increase of \$12,087.78 over the preceding year.

Figures showing revenue and receipts for the past two years are given for comparison with expenditure table above.

		1934.	1935.	1936.
Revenue from Night-Soil Collection	...	\$153,227.15	\$146,591.15	\$154,649.27
Revenue from Trade Refuse Collection	...	\$ 26,307.11	\$ 25,432.67	\$ 28,186.96
Fines remitted from Police Court	...	\$ 1,241.00	\$ 867.50	\$ 2,142.87

As in previous years street obstructions were largely dealt with by the Conservancy Department. During the year 365 people were summoned and 345 convictions recorded.

SCHEDULE OF EXPENDITURE.

Scavenging.						
Personal Emoluments	...	...	...	...	\$ 14,505.00	
Transport	...	...	...	...	3,193.86	\$17,698.86
Provident Fund	...	...	...	...	1,805.42	
Uniforms	...	...	...	...	154.50	
Telephones	...	...	...	...	34.57	
Water Supply	...	...	...	...	1,810.27	
Indian Immigration Assessment	...	...	...	...	1,569.07	
Minor Works	...	...	...	...	44.31	
Miscellaneous	...	...	...	...	135.03	5,553.17
Wages of Divisional Overseers, etc.	...	...	...	...	3,177.07	
Coolies sweeping drains and loading refuse	}			...	73,072.72	
Coolies sweeping roads and loading refuse				...		
Hire of electric vans Nos. 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 21 and 22	...	...	...	...	24,860.80	
Hire of motor vans Nos. 1, 2, 3, 5, 15, 16, 17, 18, 19, 20, 23, and 24	...	...	...	...	21,227.57	
Hire of Dennis Street Washers Nos. 1 and 2	...	...	...	...	5,139.20	
Hire of motor road brooms Nos. 1 and 2	...	...	...	...	1,790.00	
Sundry Stores	...	...	...	...	5,604.86	
Scavenging Tubs	...	...	...	...	2,810.75	
Miscellaneous	...	...	...	...	1,178.39	
					\$138,861.36	
Less Credits Received	...	...	...	...	385.11	138,476.25
Total	...	...	...	...		\$161,728.28

Night-Soil Collection.

Personal Emoluments	...	...	...	8,870.00	
Transport	...	...	...	1,829.00	\$10,699.00
Provident Fund	...	...	...	1,473.85	
Uniforms	...	...	...	295.24	
Telephones	...	...	...	34.57	
Water Supply	...	...	...	8,968.62	
Indian Immigration Assessment	...	...	...	303.24	
Minor Works	...	...	...	130.28	
Running Cost of Night-Soil Depot	...	...	...	8,899.75	
Night-Soil Disposal	...	...	...	3,219.45	
Miscellaneous	...	...	...	914.26	24,239.26
Wages of Divisional Overseers, etc.	...	...	...	5,278.00	
Coolies loading and unloading, and washing pails, etc. on motor vans	...	...	...	27,892.90	
Value of pails used	...	...	...	8,939.03	
Repairs to pails	...	...	...	769.40	
Miscellaneous	...	...	...	294.53	
Sundry Stores	...	...	...	3,211.76	
Hire of Cesspool Emptiers Nos. 1 and 2	...	...	...	3,022.80	
Hire of S. D. Freighters Nos. 1, 2, 7, 8, 11, 12, 14 and 16	...	...	...	16,754.50	
Hire of Albion Van No. 17	...	...	...	2,372.80	
Hire of Bedford Vans Nos. 3, 9, 10, 15, 19, 23 and 24	...	...	...	17,715.45	
				\$86,251.17	
Less Credits Received	...	...	...	1,795.78	84,455.39
Total	...	...	...		\$119,393.65

24. SCAVENGING.

Daily scavenging was carried on throughout the year with the usual regularity over the whole Municipal area. There was cessation of work only on the 6th February and 13th November for Thaipusam and Deepavali festivals and on 14th December on the occasion of the King's Birthday.

With regard to refuse collection, the following vans were used on to scavenging service :—

12 Ransome Electric Lorries

7 Morris (one ton) Lorries

5 Bedford Lorries

This allowed 1 electric and 1 motor van to each of the 9 scavenging divisions with an additional electric van in "H" division, the remainder being held in reserve for use when vans in regular use were under repair and for any other emergency.

The amount of refuse collected shows a decrease in comparison with 1935, the figure being 100,735 cubic yards. Of this amount 77,808 cubic yards consisted of house refuse and 22,927 consisted of drain refuse. The amounts removed annually since 1927 may be compared from the figures given below:—

Year.		Cubic yards of refuse removed
1927	...	107,716
1928	...	113,748
1929	...	119,002
1930	...	119,130
1931	...	118,807
1932	...	113,746
1933	...	106,337
1934	...	106,927
1935	...	106,578
1936	..	100,735

APPENDIX NO. I.
REFUSE COLLECTION.

Graph Showing Comparative Annual Cost and Amount of Refuse Collected.



*Including Workshop Expenditure and Overhead Charges not included in previous years.

The following table gives a more detailed record of the amount of refuse dealt with during 1936:—

Month.	Electric Vans		One-Ton Motor Vans	
	Quantity in loads.	Quantity in cubic yards.	Quantity in loads.	Quantity in cubic yards.
January ...	1,520	7,144	1,720	2,064
February ...	1,336	6,279	1,533	1,840
March ...	1,384	6,505	1,676	2,011
April ...	1,311	6,162	1,500	1,800
May ...	1,342	6,307	1,571	1,885
June ...	1,332	6,260	1,580	1,896
July ...	1,426	6,703	1,615	1,938
August ...	1,378	6,476	1,658	1,990
September ...	1,357	6,378	1,548	1,857
October ...	1,392	6,543	1,610	1,932
November ...	1,332	6,260	1,473	1,768
December ...	1,445	6,791	1,622	1,946
Total ...	16,555	77,808	19,106	22,927

The comparison of the amount of refuse removed during recent years is shown in graph. (Appendix No. 1).

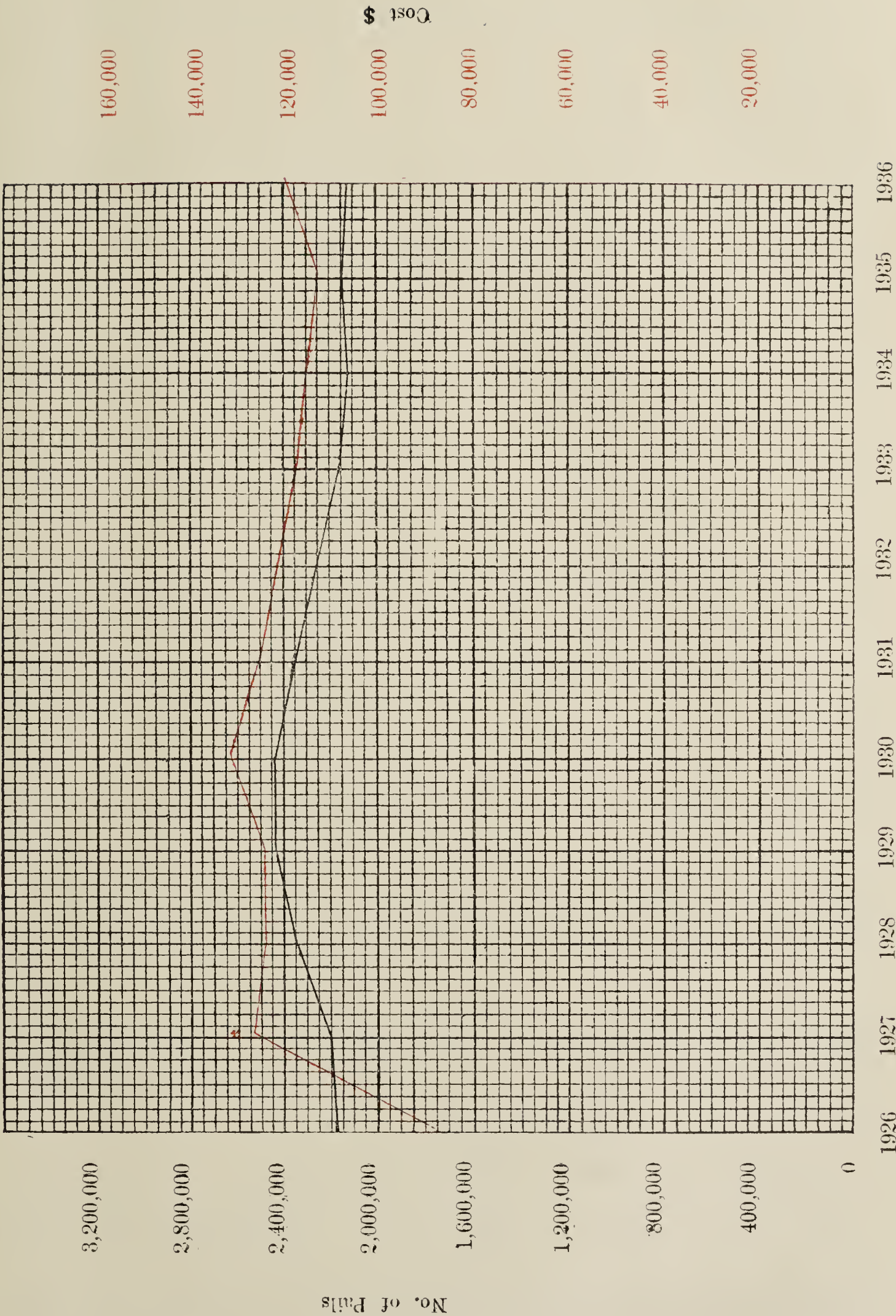
As in previous years half tar barrels were placed along roadsides for use as refuse tubs. A total of 3,779 was supplied for this purpose during 1936.

The following table shows the work carried out during the year by the two Dennis Street Washers which worked nightly when necessary from midnight to daybreak.

Month.	Dennis No. 1.		Dennis No. 2	
	Washing Gallons.	Days Worked	Washing Gallons	Days Worked.
January ...	501,600	24	271,700	13
February ...	572,000	29	674,300	29
March ...	434,500	21	579,700	28
April ...	277,200	14	500,400	27
May ...	386,100	21	391,600	20
June ...	521,400	28	427,900	23
July ...	573,100	31	616,000	31
August ...	491,700	27	524,700	27
September ...	449,900	25	482,900	25
October ...	414,700	22	416,900	21
November ...	426,800	23	434,500	22
December ...	418,000	23	426,800	23
Total ...	5,467,000	288	5,747,400	289

APPENDIX NO. II.
NIGHTSOIL COLLECTION.

Graph Showing Comparative Annual Cost and Number of Pails Collected.



*Including Workshop Expenditure and Overhead Charges not included in previous years.

25. NIGHT-SOIL COLLECTION

The total of night-soil pails collected from latrines during the year amounted to 2,129,083 which is a decrease of 15,171 in the figure for 1935.

The following extract of figures shows the comparison of work with 1935.

		1935	1936	Decrease
Number of latrines dealt with, December 31st	..	9,259	9,244	15
Number of pails removed	.. ..	2,144,254	2,129,083	15,171

The number of pails of night-soil collected in previous years is shown on the graph. (Appendix No. 2)

The average number of latrines to which the service was applied was 9,270 being a decrease of 44; these latrines were situated:—

In Compulsory Area	..	..	8,697
In Voluntary Area	..	..	573
			<hr/> 9,270 <hr/>

The actual number of latrines to which the service was applied on December 31st, 1936 was 9,244 being classified:—

Public Latrines, pails removed twice daily	..	..	112
Private .. .. .	..	..	21
Public once ..	..	..	28
Private .. .. .	..	..	1,910
Private on alternate days	..	..	7,173

The charge for daily collection was \$2.50 each per month and for alternate daily collection \$1.25 per month except in the New Compulsory Area where a daily collection only is given at a charge of \$1.25 per month.

Where back lanes are constructed night-soil pails are removed from the latrines in the back lanes, but in the older parts of the town where back lanes do not exist it is necessary to carry the latrine pails through the houses.

		December 1935	December 1936	Increase	Decrease
Latrines cleared from back lanes	..	7,532	7,500	—	32
Latrines cleared through houses	..	1,727	1,744	17	—

Wherever the night-soil service is used the latrine pail is provided without additional charge to that quoted for removal. 2,016 new pails were issued while defective pails were repaired at the workshop as follows:—

General repairs	..	558
New rims fitted	..	269
Secondhand rims fitted	..	2,239

Transport.

There were 13 vans on regular nightly service. They consisted of:—

6 Bedford Vans, capacity 40 pails each, total	240
6 S. D. Freighters, „ 40 „ „ „	240
1 Albion Van, „ 48 „ „ „	48
	<hr/>
	528
	<hr/>

In reserve were:—

1 Bedford Van)	
	)	Capacities as above.
2 S. D. Freighters)	

26. PUBLIC LAVATORIES

The following is a list of the public lavatories. At the end of the year these comprised 189 latrines in all of which 49 are W.C.'s, the remainder being bucket latrines:—

Ah Quee Street	..	..	..	18 with Bath
Argyll Road	..	..	..	2
*Bridge Street	..	..	..	10
Campbell Street Market	..	..	..	16 with Bath
Central Market	..	..	..	16 with Bath
Chowrasta Market	..	..	..	14 with Bath
Dato Kramat Gardens (behind Police Station)				2
*Duke Street	..	..	..	2
*Esplanade Road	..	..	..	11
Government Public Latrines (Downing Street)				6
Jelutong Market	..	..	..	2 with Bath
Kampong Kolam	..	..	..	14 with Bath
Kampong Malabar	..	..	..	12
Malacca Street	..	..	..	4
Maxwell Road	..	..	..	8
*Municipal Office (near Car Shed)	..	..	..	4
Prangin Market	..	..	..	3 with Bath
Pulau Tikus Market	..	..	..	4 with Bath
Sikh Burial Ground, Western Road			..	2
Tek Soon Street	..	..	..	5
Sungei Pinang (near bridge)	..	..	..	2
*Sungei Pinang (by P.W.D. Store)			..	2
*Weld Quay No. 1 (near Market St. Ghaut)				10
Weld Quay No. 2	..	..	..	10
*Weld Quay No. 3 (near Prangin Rd. Ghaut)				10

*These lavatories are of the Water Carriage Type, constructed of glazed brickwork, each closet having an automatic flushing cistern and a small water tank for ablution.

Lavatories shown "with bath" have a Public Bath House attached.

All lavatories having bucket latrines are washed down and sprinkled twice daily with Hypochlorite Solution. In the case of lavatories with Septic Tank Installations no disinfectant is used but the interior of the buildings is cleansed thoroughly with water daily.

In the case of bucket latrines, pails are removed nightly by divisional vans and again between 10.00 a.m. and 1.00 p.m. by a van provided exclusively for public latrine work.

27. MARKETS.

The control of markets and street stalls was transferred to the Health Department as from January, 1936.

During the year minor maintenance work was carried out at Central, Prangin, Pulau Tikus, Sungei Pinang, Jelutong and Campbell Street Markets.

The outside stalls in Central Market were demolished during August, and accommodation for the stall holders was provided inside the market.

In Chowrasta Market the fish stalls were retiled, and two vacant meat stalls were converted into a duck stall. Also, the meat stores were demolished, and the space prepared for the accommodation of eleven onion sellers who had previously occupied sites in Tamil Street.

Demolition of the market in Tramway Road was completed during August and the evicted stall holders were transferred to the new Dato Kramat Market which was opened on 1st August.

The floors and drains in and attached to the public markets were washed down daily and sprayed with disinfectant, and kept as clean as possible.

28. STREET STALLS.

As in previous years great difficulty was experienced in keeping licensed stalls within the limits of their sites. Some difficulty was also experienced with stall holders who did not remove their stalls between 3 and 5 p.m. to permit of street cleaning. In these and other offences against the By-Laws warning notices were issued and in some cases after a recurrence of the offence, licences cancelled.

As in previous years there were a large number of unlicensed street stalls and these were, so far as possible, dealt with.

During the year a number of complaints were received from shopkeepers regarding street stalls outside their premises. These were all investigated and as a result 29 sites were cancelled. These sites were situated in the following streets:—

Acheen Street Ghaut	..	4
Armenian Street Ghaut	..	1
Armenian Street	..	1
Campbell Street	..	1
Cintra Street	..	2
Kampong Malabar	..	1
Kimberley Street	..	6
Rope Walk	..	1
Tek Soon Street	..	1
Campbell Street	..	11
		—
Total	..	29
		—

In addition 23 sites were cancelled in Esplanade Road as a result of the lease of the land held from Government not being renewed after 31st December, 1936.

The number of sites was reduced from 379 on 1st January, 1936, to 327 on 1st January, 1937.

The following table gives all licensed streets, showing the number of stalls, used and vacant, on 1st January, 1937.

Street	Vacant Pitches	Licensed Pitches	Total
Armenian Street Ghaut ..	—	7	7
Armenian Street ..	—	13	13
Campbell Street ..	—	47	47
Cecil Street Ghaut ..	—	2	2
Cheapside ..	—	18	18
Cintra Street ..	1	52	53
Datoh Koyah Road ...	—	3	3
Kampong Malabar ..	—	13	13
Keng Kwee Street ..	—	8	8
Kimberley Street ..	—	112	112
Kuala Kangsar Road ..	—	10	10
Market Street Ghaut ..	—	2	2
Noordin Street Ghaut ..	—	1	1
Presgrave Street Ghaut ..	—	2	2
Queen Street ..	1	14	15
Rope Walk ...	1	13	14
Sungei Ujong Road ..	—	4	4
Tek Soon Street ..	—	3	3
Total ..	3	324	327

29. THEATRES

All theatres and cinemas were inspected once a week. The standard of sanitation remains good.

30 MEDICAL ATTENDANCES

Medical advice or treatment was given to Municipal employees 13,457 times.

The total for 1935 was 13,832 and for 1934 was 12,977.

The number seen per month varied from 909 in February to 1,401 in October.

The numbers seen in the different department were:— Engineer 6,075, Health 4,748, Electrical 1,512 Fire Brigade 74, Jimricksha 17, Water 707, Secretariat 170 and Veterinary 154.

31. SALE OF FOOD AND DRUGS ACT

Most of the work under the Sale of Food and Drugs Act is concerned with the supply of fresh milk. Each vendor was examined as to his physical fitness before being licensed and any suspicion of Tuberculosis or other illness which might be transmitted through milk resulted in refusal. 211 milk sellers passed the test and were licensed during 1936.

One whole time milk inspector was employed by the department. Daily he inspected the milk of licensed vendors and generally kept a watch to see that there were no unlicensed sellers. Six suspected samples of milk were sent to the Government Analyst for analysis of which five were found to be adulterated. All the sellers of these were prosecuted and convicted with the exception of one against whom a warrant of arrest was issued for non-attendance in Court. 13 others were prosecuted and convictions were obtained — one for failing to expose his badge, one for conveying milk in bottles of other than the approved type, four for failing to carry their licences, and thirteen for selling milk without being licensed.

The total amount of fines inflicted on milk vendors was \$201.00.

32. DESTRUCTION OF RATS.

A special gang of six coolies with one Assistant Supervisor was detailed: they used direct slaughter after smoking out the runs, and to a less extent poison and traps.

By direct slaughter they accounted for 7,500 rats during the year.

33. WATER SUPPLY.

There was throughout the year an ample supply of good drinking water, the average consumption being 39 gallons per head, including water used for trade purposes and shipping.

34. FINANCIAL

The total expenditure for the year was \$162,092.00.

This includes the Quarantine Camp, the Maternity and Child Welfare Work, Vaccination, Anti-Mosquito Work, all pay and allowances and the Commissioners' donations to the Provident Fund of our staff.

The revenue was \$15,605.00 leaving \$146,487.00 as the cost of the department to the rate-payers.

This represents a Rate of 2.746 per cent. or 6.59 pence in the pound sterling.

The estimated population being 165,411, the total cost of the department for the year per head of population is about 98 cents or about two shillings and three and half pence sterling.

35. STAFF

Dr. Y. H. Hoashoo, Lady Assistant Medical Officer arrived and assumed duty on 6th June.

Mr. A. E. M. Denny, Town Superintendent, was granted leave prior to resignation from 13th September.

Mr. W. G. F. Colebeck was appointed Town Superintendent and assumed duty on 27th August.

Mr. Ismail bin Dalbadar, Peon, was appointed Assistant Supervisor in place of Ibrahim bin Omar who was reverted to his original appointment as Peon.

The following resigned their appointments:—

M. D'Souza, Sanitary Sub-Inspector, retired on medical grounds, 31st March.

Tan Tiang Huat, Assistant Inspector of Street Stalls, transferred to Municipal Engineer's Stores, 1st May.

Din bin Mat Sahid, Market Peon, medically boarded out, 15th June.

Rabu bin Leh, Market Peon, medically boarded out, 15th June.

Hussain bin Osman, Additional Police Constable No. 6 medically boarded out, 31st March.

Banlisha bin Lala Meah, Additional Police Constable No. 13, retired on reaching age limit.

The services of the following were dispensed with:—

B. Arokiasamy, Scavenging Overseer, 5th June.

Yusoff bin Haji Snaffi, Market Peon, 30th June.

The following appointments were made:—

Mrs. Lena Samuel, Health Nurse, 1st August.

Miss Lim Beh Kah, Health Nurse, 1st August.

Madam Ong Beh Loh, Caretaker, 1st August.

Teoh Cheng Kooi, Sanitary Sub-Inspector, 1st May.

Lim Cheng Hoe, Assistant Inspector of Street Stalls, 1st May.

C. Damoodaram, Scavenging Overseer, 9th June.

Yusoff bin Haji Snaffi, Market Peon, 15th May.

Mohamed bin Haniffa, Market Peon, 1st July.

Osman bin Mohamed, Market Peon, 1st July.

Mukhtar bin Haji Hassan, Market Peon, 1st July.

Ahmad bin Mohamed, Taib, Market Peon, 1st August.

I have to record with pleasure my appreciation of the co-operation given by the entire staff.

I have the honour to be,

Gentlemen,

Your obedient servant,

Sd. E. W. GRAHAM,

Ag. Municipal Health Officer.

Penang, 20th March, 1937.

To

The Municipal Health Officer,
Penang.

Sir,

I have the honour to submit the report of the work done by the staff during the year ending 31st December, 1936.

GENERAL SANITATION.

The staff made 37,140 inspections and 55,538 re-inspections, in which 1,179 premises were found defective and 1,730 dirty.

The following table shows how the notices were dealt with during the year.

Notices.	Outstanding on 31.12.35.	Unserved on 31.12.35.	New notices issued 1936.	New notices served 1936.	Unserved on 31.12.36.	Complied with in 1936. —	Work proceeding on 31.12.36.	Cancelled in 1936.	Brought forward to 1937.
Nuisance ...	36	—	47	47	—	55	3	—	28
Lime Washing ...	3	—	133	133	—	125	1	3	8
Latrine ...	18	—	200	196	4	197	1	2	15
Drain ...	6	—	129	122	7	117	1	—	11
Filthy Premises ...	9	—	397	397	—	385	—	4	17
Common Lodging House ...	3	—	675	675	—	664	4	8	6
Trade ...	27	—	950	950	—	954	—	1	22
Bakery, Cook Shop and Eating Shop ...	181	—	1034	1034	—	977	—	10	228
By-Law ...	24	2	288	290	—	296	2	4	14
Well ...	2	—	38	38	—	36	1	2	2
Partition ...	31	1	344	343	2	325	5	9	40
Open Space ...	11	—	58	58	—	58	1	1	10
Mosquito Order ...	19	—	182	181	1	169	8	—	31
Rat ...	3	—	12	12	—	15	—	—	—
Disinfection ...	—	—	565	564	1	555	—	8	1
Sanitary Installation ...	—	—	18	18	—	18	—	—	—
Closing Order ...	14	—	2	2	—	16	—	—	—
Lodging House (Minor Offences Ordinance) ...	—	—	29	29	—	29	—	—	—
Total ...	387	3	5101	5089	15	4991	27	52	433

52 notices were cancelled for various reasons.

55 nuisance notices were complied with during the year. These dealt with 116 houses of which 9 were structurally altered to provide better light and ventilation, 17 houses were generally repaired, 85 were either closed or demolished, and 5 for other nuisances.

Complaints were received daily, many of them anonymous and all were investigated and dealt with.

WELLS.

38 notices under Section 254 of the Municipal Ordinance were served and 2 brought forward from 1935. 36 notices were complied with resulting in the closing of a like number of wells, and 4 were carried forward to 1937.

CEMETERIES.

The Sub-Inspector in charge made 208 visits to the cemeteries.

EXHUMATIONS.

53 applications were received during the year and one brought forward from 1935, all of which were approved.

32 bodies were exhumed under special licence and the remaining number was carried forward to 1937.

PASSENGERS.

160 passengers arrived from infected ports and were kept under observation by the staff as against 168 last year.

PLANS.

250 plans, submitted for approval by the Commissioners, were examined in this office as against 259 last year.

PROSECUTIONS.

268 summonses were issued	256 convictions
during the year	4 withdrawn
	1 discharged
84 were brought forward	91 carried forward
from 1935	
<hr/>	<hr/>
Total 352	Total 352
<hr/>	<hr/>

27 Abatement of Nuisance, 2 Closing, 1 Ejectment, 1 Prohibition and 3 Mandatory Orders were obtained.

The fines imposed by the Magistrate amounted to \$3,235.50 as against \$5,803.60 the previous year.

DISINFECTIONS.

625 houses were disinfected during the year for the following causes:—

Tuberculosis	...	...	...	311
Diarrhoea	...	...	...	95
Enteritis	...	...	...	94
Chicken-pox	...	...	...	50
Enteric Fever	...	...	...	33
Diphtheria	...	...	...	24
Dysentery	...	...	...	13
Beri-Beri	...	...	...	1
Measles	...	...	...	1
Tubercular Meningitis	...	...	...	1
Erysipelas	...	...	...	1
Leprosy	...	...	...	1
Total				625

The houses disinfected being distributed as follows:

TUBERCULOSIS:—Beach Street (18); Chulia Street (14); Cintra Street, Bridge Street and China Street (12 each); Seck Chuan Lane, Kimberley Street and Presgrave Street (9 each); Burnmah Road (8); Penang Road and Perak Road (7 each); Anson Road, Carnarvon Street and Prangin Lane (6 each); Rope Walk, Jelutong Road, Magazine Road, Brick Kiln Road, Hutton Lane, Kuala Kangsar Road, Chulia Lane and Campbell Street (5 each); Kelawei Road, Carnarvon Lane, Dato Kramat Road, Sungei Pinang Road and Armenian Street (4 each); Cantonment Road, Toh Aka Lane, Acheen Street, Noordin Street, Cecil Street, West Jelutong, East Jelutong, Prangin Road, King Street, and Ayer Itam Road (3 each); Church Street, Kampong Malabar, Malacca Street, Patani Road, Victoria Street, Tye Sin Street, Pitt Street, Macalister Lane, Kampong Java Bahru, Queen Street, Weld Quay, Muntri Street, Love Lane, Timah Road; Trang Road, McCallum Street, Penang Street, Seang Tek Road and Bishop Street (2 each); Bertam Lane, Kinta Lane, Larut Road, Gladstone Road, Jahudi Road, Transfer Road, Argyll Road, Selama Road, Batu Lanchang, Penaga Road, Lorong Salamat, Immigration Road, Service Road, North Beach, Leith Street, Amoy Lane, Scotland Road, Chowrasta Road, Nagore Road, Macalister Road, Lorong Seratus Tahun, Krian Road, Mount Erskine Road, Aboe Sittee Lane, Cheapside, Kajang Road, Selangor Road, Langkawi Road, York Road, Barrack Road, Tamil Street, Phuah Hin Leong Road, Arratoon Road, Ariffin Road, Kampong Deli, Mandalay Road, Gaol Road, McNair Street, Stewart Lane, Dato Koyah Road, Sri Bahari Road, Caunter Hall, Malay Street, Pahang Road, Kedah Road, Green Lane, Tek Soon Street and Soo Hong Lane (1 each).

DIARRHOEA:—Bridge Street (8); Campbell Street (5); West Jelutong, Muntri Street, Tye Sin Street and Perak Road (4 each); Caunter Hall, Beach Street and Brick Kiln Road (3 each); Madras Lane, McNair Street, Cintra Street, Armenian Street, Rope Walk, Carnarvon Street, Burnmah Road, Kedah Road, Toh Aka Lane, Carnarvon Lane, Kuala Kangsar Road and Victoria Street (2 each); Jelutong Road, Perlis Road, Gladstone Road, Malacca Street, Scotland Road, Ariffin Road, East Jelutong, Katz Street, Chulia Street, Cantonment Road, Trusan Road, Green Lane, King Street, Selangor Road, Kuantan Road, Dato Kramat Road, Love Lane, Penang Road, Seck Chuan Lane, Sandilands Street, Penaga Road, Armenian Street Ghaut, Cooly Lines, Dato Koyah Road, Magazine Road, Queen Street, Che Em Lane, Chulia Lane, Timah Road, Seang Tek Road, Nagore Road, Malay Street and Weld Quay (1 each).

ENTERITIS:—Carnarvon Street, East Jelutong, Bridge Street and Beach Street (5 each); Campbell Street, West Jelutong, Burmah Road, Presgrave Street and Cintra Street (3 each); Perak Road, Magazine Road, Green Lane, Tye Sin Street, Noordin Street, Rope Walk, Jelutong Road, Malay Street, Kedah Road, Lumut Lane, Hargreaves Road and Prangin Road Ghaut (2 each); Anson Road, Ceylon Lane, Brick Kiln Road, Batu Lanchang Lane, College Lane, China Street, Chulia Street, Transfer Road, Perak Lane, Batu Lanchang, Acheen Street, Carnarvon Lane, Argyll Road, Muntri Street, Kimberley Street, Keng Kwee Street, Buckingham Street, McNair Street, Gladstone Road, Prangin Road, Tamil Street, Bishop Street, Cecil Street, Weld Quay, Irving Road, Cooly Lines Road, Hutton Lane, Dato Kramat Road, Dato Koyah Road, Tanjong Tokong Road, Teh Aka Lane, Barrack Road, McCallum Street, Pahang Road and Macalister Road (1 each).

CHICKEN-POX:—King Street and Cooly Lines (5 each); Transfer Road (4); Penang Street and China Street (3 each); Kimberley Street, Penang Road, Barrack Road, Northam Road and Market Lane (2 each); Halfway Road, Patani Road, Scotland Road, Queen Street, Kampong Java Bahru, Rangoon Road, Cantonment Road, Timah Road, Magazine Police Station Barracks, Burmah Road, Argyll Road, Panchor Road, Armenian Street, Church Street, Anson Road, Sungei Pinang Lane, Malay Street, Perak Road, Lumut Lane, Brick Kiln Road and Patani Road (1 each).

ENTERIC FEVER:—Rope Walk, Burmah Road, Armenian Street, Penang Road, Victoria Street and Presgrave Street (2 each); Hongkong Street, Gaol Road, Church Street, Cintra Street, Beach Street, Madras Lane, Malay Street, Maxwell Road, Chulia Lane, Perak Road, Carnarvon Lane, Macalister Lane, Kajang Road, Noordin Street, Brick Kiln Road, Bertam Lane, Campbell Street, Chulia Street, Green Hall, Weld Quay and Hospital Road (1 each).

DIPHTHERIA:—Burmah Road (4); Patani Road, Chulia Street and West Jelutong (2 each); Lumut Lane, Market Lane, Market Street Ghaut, Rope Walk, Macalister Road, Nagore Road, Love Lane, Sungei Ujong Road, Timah Road, Chow Thye Road, Kampong Malabar, Muntri Street, Bridge Street and Green Lane (1 each).

DYSENTERY:—Chulia Street, Macalister Road, Tek Soon Street, Armenian Street, Perak Lane, Lorong Seratus Tahun, Logan Road, Tye Sin Street, Pahang Road, Chulia Lane, Campbell Street, Perak Road, and Burmah Road (1 each).

BĒRI-BĒRI:—Chulia Street (1).

MEASLES:—Timah Road (1).

TUBERCULAR MENINGITIS:—Beach Street (1).

ERYSIPELAS:—Carnarvon Street (1).

LEPROSY:—Perak Road (1).

TRADES.

The fees collected during the year for trade licences amounted to \$8,622.20 as against \$8,511.00 the previous year, an increase of \$111.20.

COMMON LODGING HOUSES.

672 common lodging houses were licensed during the year as against 691 in 1935 and the fees collected amounted to \$1,393.90 as against \$1,373.90, a decrease of 19 houses and an increase of \$20.00 in fees.

From time to time night visits to common lodging houses were made. Individual houses were not selected arbitrarily for inspection, the method being to inspect all lodging houses in a certain predetermined area. The visits were made between 1 and 3 o'clock in the morning. 149 houses were visited and 80 of them were found to be overcrowded to an extent of more than 10% in excess of the number for which they were licensed. One house, a rickshaw depot, was found to be overcrowded to the extent of 236%. The house was licensed for 21 persons and actually accommodated at the time of our inspection 70 adults and one child. 8 other houses were overcrowded to an extent of over 100%.

The keepers of all houses showing an excess of more than 10% were prosecuted and fines totalling \$1,542 were imposed.

MILK.

211 milk sellers were registered in 1936, the same number as in 1935.

5,624 lactometer tests were made during the year, 6 samples being sent to the Analyst, 5 of which were returned as being below standard.

24 summonses were issued, 5 for selling adulterated milk and 19 for offences against the bye-laws and regulations.

58 were brought forward from 1935.

Total	82
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23 convictions were obtained.

1 was carried forward to 1937.

58 summonses being accumulated over a number of years against milk sellers who cannot be traced.

Total	82
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Fines amounting to \$201 were imposed as against \$689 in 1935, a decrease of \$488.

VACCINATION.

Our vaccinators made 3,281 primary and 242 secondary vaccinations. 1,600 tubes of lymph were used at a cost of \$400.

Private practitioners and public vaccinators made 1,036 primary vaccinations.

The Government vaccinator made 131 primary and 1,451 secondary vaccinations within Municipal limits.

RATS.

The gang of rat-catchers caught and destroyed 7,500 rats during the year by means of smoking, trapping and the use of poison.

ANTI-MOSQUITO WORK.

Four anti-mosquito gangs worked during the year, cutting down vegetation, digging, levelling and clearing ditches in "reserve roads" within Municipal limits. They also carried out works at the request, and at the expense of owners. All streams were cleared when necessary and, as in previous years, particular attention was paid to the stream at the Chetty Temple during the Thaipusam Festival.

The oiling gangs under supervisors regularly oiled all ditches, swamps and streams within Municipal limits and the Race Course, and Kelawei Road, Bagan Jermal, Mount Erskine, Western Road, Waterfall Road and Scotland Road including the foothills to Kampong Bahru, Batu Gantong and foothills, Caunter Hall, Perak Road, East and West Jelutong and Jelutong Village, Bukit Dunbar, Perak Lane, Burmah, Anson, Larut, Gottlieb, Sungei Pinang, River, Patani, Jelutong and Batu Lanchang Roads.

The work throughout the year pursued a normal routine except for a few days in October when it was re-organized to permit of an anti-mosquito "drive" the results of which are recorded under Section 11 of the Health Officer's report. On two days it was impossible to carry out any work at all owing to extensive flooding.

88,000 gallons of anti-malarial oil were used, the cost being \$14,437.50.

At the request of certain owners work was done on private property and the income from this source was \$1,806.00.

STAFF.

Teoh Cheng Kooi, clerk in the Municipal Engineer's store, was transferred on 1st May as Sanitary Sub-Inspector vice M. D'Souza retired.

Md. Ismail bin Dalbadar, Peon, was promoted to Assistant Supervisor in July in place of Ibrahim bin Omar who reverted to his original post as Peon.

It is my pleasure to acknowledge the excellent work of the staff whose co-operation has enabled us to maintain the steady progress of previous years.

I have the honour to be,

Sir,

Your obedient servant,

Sd. J. E. MILLER,

Chief Sanitary Inspector.

Prosecutions	Brought forward from 1935	Issued in 1936	Cases in Court	Convictions	Withdrawn	Discharged	Abatement of Nuisance Order	Closing Order	Ejectment Order	Prohibition Order	Mandatory Order	Total Orders obtained	Fines		Costs	
													\$	cts.	\$	cts.
Nuisance Notice ...	2	33	28	27	1	—	27	—	—	—	—	27	59	00	13	50
Abatement of Nuisance Order	4	2	2	2	—	—	—	2	—	—	—	2	—	—	1	00
Closing Order ...	5	1	1	1	—	—	—	—	1	—	—	1	5	00	—	50
Filthy Premises ...	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—	50
Latrine ...	—	2	2	2	—	—	—	—	—	—	1	1	5	00	1	00
Drain ...	—	3	3	3	—	—	—	—	—	—	1	1	15	00	1	50
Partition ...	1	5	5	5	—	—	—	—	—	—	1	1	34	50	2	50
Open Space ...	—	1	1	1	—	—	—	—	—	—	—	—	6	00	—	50
Trade ...	—	17	17	17	—	—	—	—	—	—	—	—	114	00	8	50
Unlicensed Common Lodging House ...	1	35	34	33	1	—	—	—	—	—	—	—	486	00	16	50
Breach of By-laws re Bakery, etc. ...	10	52	52	51	1	—	—	—	—	—	—	—	473	00	25	50
Breach of By-laws re C.L. House ...	—	1	1	1	—	—	—	—	—	—	—	—	6	00	—	50
Breach of By-laws re Cattleshed ...	—	1	1	1	—	—	—	—	—	—	—	—	20	00	—	50
Mosquito Order ...	1	1	1	1	—	—	—	—	—	—	—	—	8	00	—	50
Milk Regulation ...	58	24	23	22	—	1	—	—	—	—	—	—	201	00	31	00
Birth ...	2	4	4	4	—	—	—	—	—	—	—	—	12	00	2	00
Death ...	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—	50
Unlicensed Fresh Meat Shop ...	—	1	1	1	—	—	—	—	—	—	—	—	6	00	—	50
Overcrowding ...	—	1	1	1	—	—	—	—	—	1	—	1	25	00	—	50
Food & Drugs ...	—	2	2	2	—	—	—	—	—	—	—	—	200	00	37	10
Infripping terms of C.L.H. Licence ...	—	80	80	79	1	—	—	—	—	—	—	—	1540	00	39	50
Total ...	84	268	261	256	4	1	27	2	1	1	3	34	3235	50	184	10

Licences issued	1936			1935			Increase.			Decrease.		
	No.	Fees.		No.	Fees.		No.	Fees.		No.	Fees.	
		\$	cts.		\$	cts.		\$	cts.		\$	cts.
Atap Depot ...	13	39	00	11	33	00	2	6	00	—	—	—
Bakery ...	21	105	00	19	95	00	2	10	00	—	—	—
Bone Storing ...	2	24	00	2	24	00	—	—	—	—	—	—
Brazier ...	4	8	00	4	8	00	—	—	—	—	—	—
Blachan Storing ...	1	12	00	2	24	00	—	—	—	1	12	00
Blacksmith ...	23	46	00	22	44	00	1	2	00	—	—	—
Coal Depot ...	3	36	00	3	36	00	—	—	—	—	—	—
Cook Shop ...	191	955	00	189	990	00	—	—	—	7	35	00
Charcoal Depot ...	24	144	00	21	126	00	3	18	00	—	—	—
Candle Making ...	12	96	00	11	88	00	1	8	00	—	—	—
Cattleshed ...	15	69	00	20	108	00	—	—	—	5	39	00
Cowhouse ...	40	149	00	41	135	00	—	14	00	1	—	—
Dried Grass Storing ...	1	3	00	1	3	00	—	—	—	—	—	—
Dyeing House ...	4	40	00	4	40	00	—	—	—	—	—	—
Dairy ...	1	6	00	—	—	—	1	6	00	—	—	—
Eating Shop ...	809	4045	00	791	3955	00	18	90	00	—	—	—
Fresh Fish ...	1	5	00	1	5	00	—	—	—	—	—	—
Fresh Meat ...	29	145	00	26	130	00	3	15	00	—	—	—
Fish Storing ...	35	420	00	36	432	00	—	—	—	1	12	00
Foundry ...	9	18	00	10	20	00	—	—	—	1	2	00
Hides Curing ...	6	72	00	6	72	00	—	—	—	—	—	—
Hides Storing ...	1	12	00	1	12	00	—	—	—	—	—	—
Hay Storing ...	4	12	00	4	12	00	—	—	—	—	—	—
Kajang Storing ...	6	18	00	5	15	00	1	3	00	—	—	—
Market Garden ...	89	—	—	86	—	—	3	—	—	—	—	—
Milkseller ...	211	211	00	211	211	00	—	—	—	—	—	—
Pig Sty ...	535	1070	00	520	1040	00	15	30	00	—	—	—
Pepper Washing ...	1	10	00	2	20	00	—	—	—	1	10	00
Pottery Making ...	1	2	00	2	4	00	—	—	—	1	2	00
Rag & Feather Storing ...	6	72	00	5	60	00	1	12	00	—	—	—
Sugar Boiling ...	10	60	00	11	66	00	—	—	—	1	6	00
Soap Making ...	14	112	00	14	112	00	—	—	...	—	—	—
Sheep or Goats ...	10	30	20	9	32	00	1	—	...	—	1	80
Stables & Horses ...	—	—	—	1	1	00	—	—	—	1	1	00
Tannery ...	10	240	00	10	240	00	—	—	—	—	—	—
Wood Depot ...	56	336	00	53	318	00	3	18	00	—	—	—
Common Lodging House ...	672	1393	90	691	1373	90	—	20	00	19	—	—
Lodging House (Minor Offences Ordinance) ...	38	38	00	37	37	00	1	1	00	—	—	—
Total ...	2908	10054	10	2891	9921	90	56	253	00	39	120	80